

FIGURE 1A

FIGURE 1B

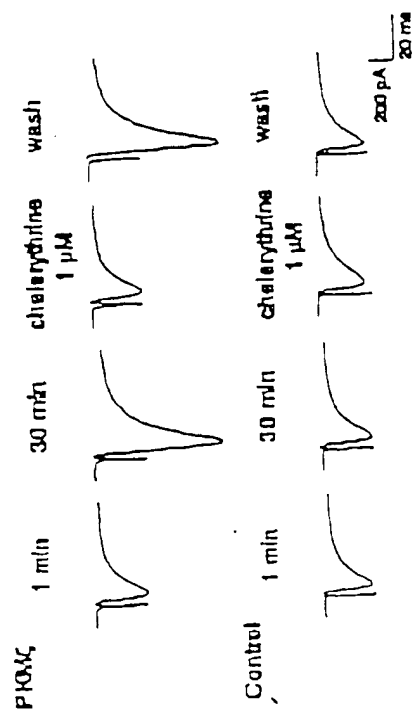


FIGURE 2A

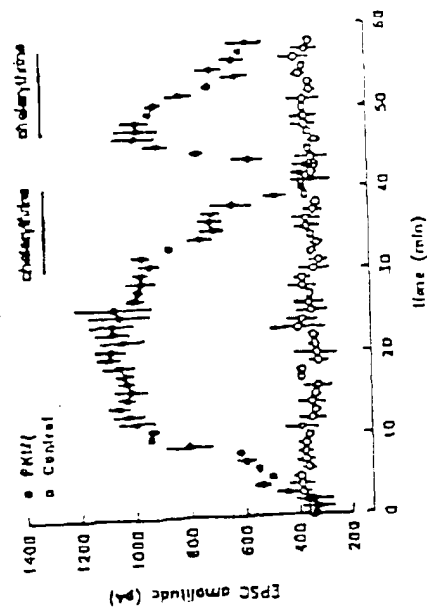


FIGURE 2B

A

Silver Stain

kDa

97-

66-

— 4POMC

FIGURE 3

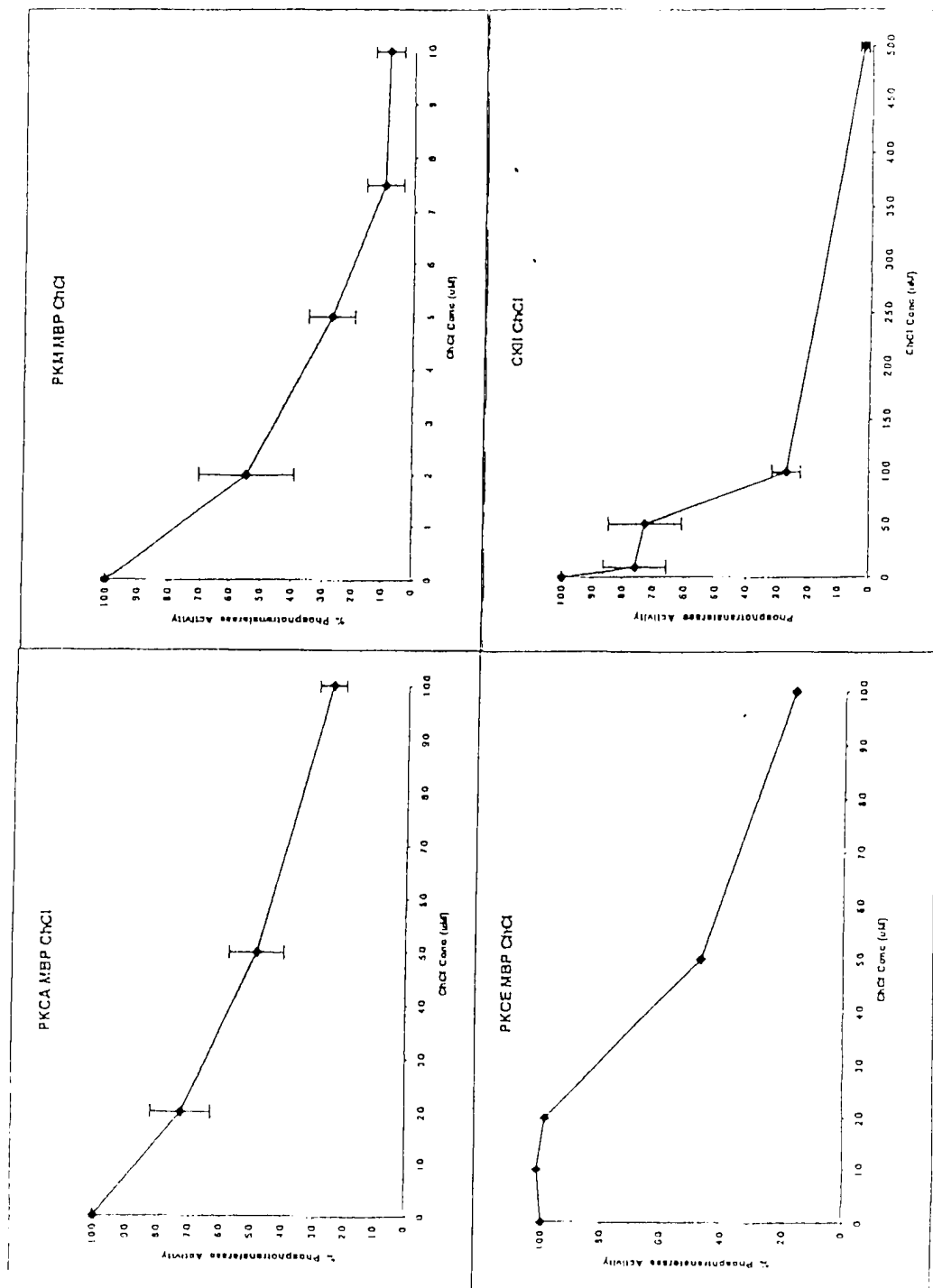


FIGURE 4

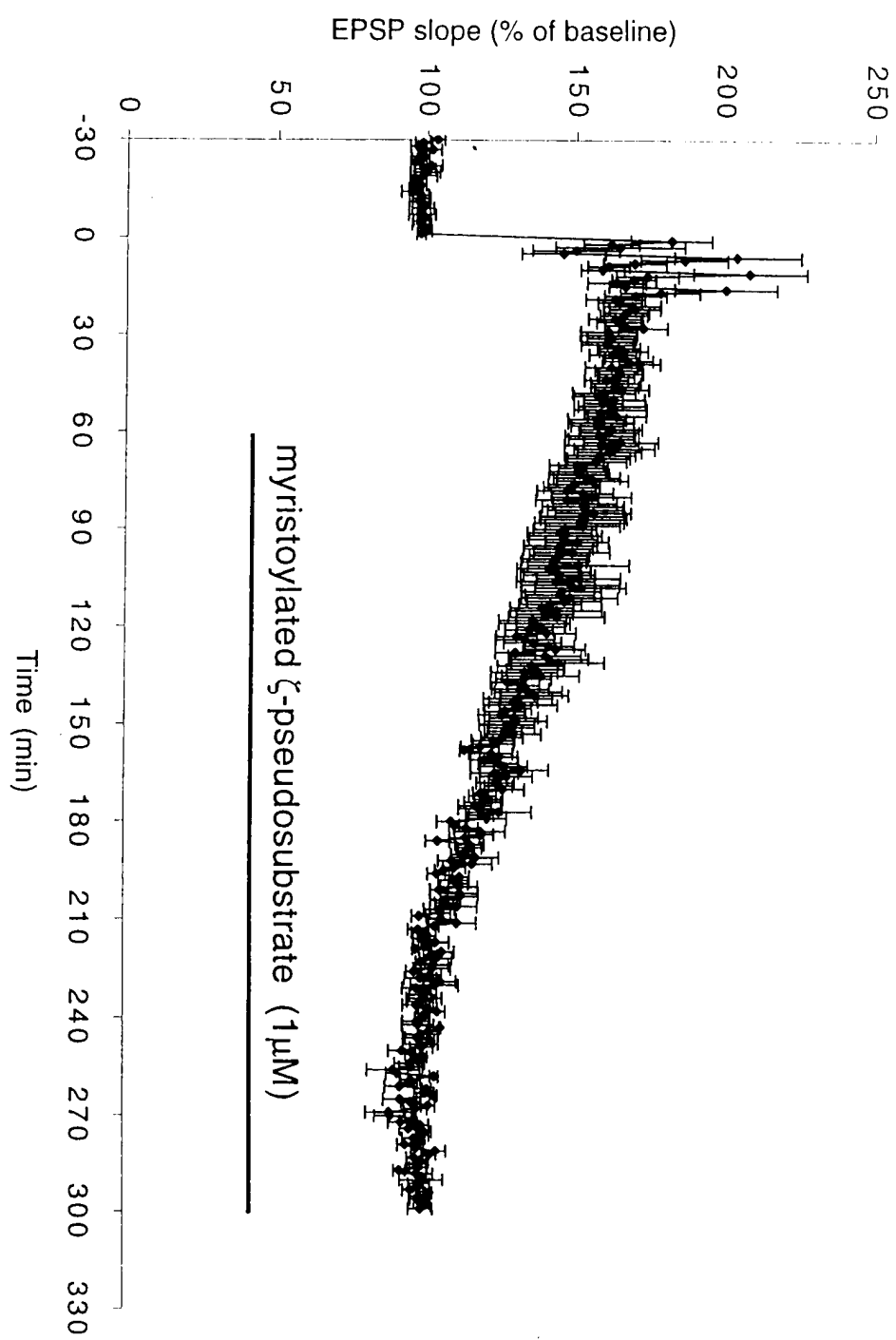


FIGURE 5

Sense : CCCGGGCCTGGAGACATGAGGAGGCAGGGATGTGAGGGGCGGGGACAGG
 Antisense: GGGCCCGGACCTCTGTACTCCTCCGTCCCTACACTCCCCGCCCCCTGTCC

10 20 30 40 50
 60 70 80 90 100
 ACAGCCGGCCTTCCGTTAAATATCTGCTCCTCGCGCTCGAGCCTCCCTGC
 TGTCGGCCGGAAGGCAATTTATAGACGAGGAGCGCGAGCTCGGAGGGACG

110 120 130 140 150
 CTATTGTGCGGGCCGGAGCGAAGCCGACGCAGCATCAGCTCGTCAACGGG
 GATAACAGCCCCGGCCTCGCTTCGGCTGCGTGTAGTCGAGCAGTTGCCC

160 170 180 190 200
 AAGGAAGATGCCTCCCTGCACGCCCCGCCGCGCACAGAGCATAAAGAATCT
 TTCCTTCTACGGAGGGACGTGCGGGCGCGCGTGTCTCGTATTTCTTAGA

210 220 230 240 250
 GCGCTGAGGAGGCAGGAGAAGAAAGCCGAATCTATCTACCGCCGGGGAGC
 CGCGACTCCTCCGTCTCTTCTTTCGGCTTAGATAGATGGCGGCCCTCG

260 270 280 290 300
 CAGAAGATGGAGGAAGCTGTACCGTGCCAACGGCCACCTCTTCCAAGCCA
 GTCTTCTACCTCCTTCGACATGGCACGGTTGCCGGTGGAGAAGGTTCCGGT

310 320 330 340 350
 AGCGCTTTAACAGGAGAGCGTACTGCGGTCAGTGCAGCGAGAGGATATNG
 TCGCGAAATTGTCTCTCGCATGACGCCAGTCACGTGCTCTCCTATANC

360 370 380 390 400
 GGCCTCGCGAGGCAAGGCTACAGGTGCATCAACTGCAAAGTCTGGTCCA
 CCGGAGCGCTCCGTTCCGATGTCCACGTAGTTGACGTTTGACGACCAGGT

410 420 430 440 450
 TAAGCGCTGCCACGGCCTCGTCCCGCTGACCTGCAGGAAGCATATGGATT
 ATTCGCGACGGTGCCGGAGCAGGGCGACTGGACGTCCTTCGTATACCTAA
 M D>

Protein:

460 470 480 490 500
 CTGTCATGCCTTCCCAAGAGCCTCCAGTAGACGACAAGAACGAGGACGCC
 GACAGTACGGAAGGGTTCTCGGAGGTCATCTGCTGTTCTTGCTCCTGCGG
 S V M P S Q E P P V D D K N E D A>

510 520 530 540 550
 GACCTTCCTTCCGAGGAGACARATGGAATTGCTTACATTTCCCTCATCCCC
 CTGGAAGGAAGGCTCCTCTGTYTACCTTAACGAATGTAAAGGAGTAGGGC
 D L P S E E T X G I A Y I S S S R>

FIGURE 6

560 570 580 590 600
 GAAGCATGACAGCATTAAAGACGACTCGGAGGACCTTAAGCCAGTTATCG
 CTTCTGACTGTCGTAATTTCTGCTGAGCCTCCTGGAATTCGGTCAATAGC
 K H D S I K D D S E D L K P V I>

610 620 630 640 650
 ATGGGATGGATGGAATCAAAATCTCTCAGGGGCTTGGGCTGCAGGACTTT
 TACCCTACCTACCTTAGTTTTAGAGAGTCCCCGAACCCGACGTCTGAAA
 D G M D G I K I S Q G L G L Q D F>

660 670 680 690 700
 GACCTAATCAGAGTCATCGGGCGCGGGAGCTACGCCAAGGTTCTCCTGGT
 CTGGATTAGTCTCAGTAGCCCGCGCCCTCGATGCGGTTCCAAGAGGACCA
 D L I R V I G R G S Y A K V L L V>
 <--ATP-Binding Site-----

710 720 730 740 750
 GCGGTTGAAGAAGAATGACCAAATTTACGCCATGAAAGTGGTGAAGAAAG
 CGCCAACTTCTTCTTACTGGTTTAAATGCGGTACTTTCACCACTTCTTTC
 R L K K N D Q I Y A M K V V K K>
 -----ATP-Binding Site----->

760 770 780 790 800
 AGCTGGTGCATGATGACGAGGATATTGACTGGGTACAGACAGAGAAGCAC
 TCGACCACGTACTACTGCTCCTATAACTGACCCATGTCTGTCTCTTCGTG
 E L V H D D E D I D W V Q T E K H>

810 820 830 840 850
 GTGTTTGAGCAGGCATCCAGCAACCCCTTCTGCTCGGATTACACTCCTG
 CACAACTCGTCCGTAGGTGCTTGGGAAGGACCAGCCTAATGTGAGGAC
 V F E Q A S S N P F L V G L H S C>

860 870 880 890 900
 CTTCCAGACGACAAGTCGGTTGTTCTGCTGTCATTGAGTACGTCAACGGCG
 GAAGGTCTGCTGTTTCAGCCAACAAGGACCAGTAACTCATGCAGTTGCCGC
 F Q T T S R L F L V I E Y V N G>

910 920 930 940 950
 GGGACCTGATGTTCCACATGCAGAGGCAGAGGAAGCTCCCTGAGGAGCAC
 CCCTGGACTACAAGGTGTACGTCTCCGTCTCCTTCGAGGGACTCCTCGTG
 G D L M F H M Q R Q R K L P E E H>

960 970 980 990 1000
 GCCAGGTTCTACGCGCCGAGATCTGCATCGCCCTCAACTTCCTGCACGA
 CGGTCCAAGATGCGCCGGCTCTAGACGTAGCGGGAGTTGAAGGACGTGCT
 A R F Y A A E I C I A L N F L H E>

FIGURE 6 (CONT'D)

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1010      1020      1030      1040      1050
GAGGGGGATCATCTACAGGGACCTGAAGCTGGACAACGTCCTCCTGGATG
CTCCCCCTAGTAGATGTCCCTGGACTTCGACCTGTTGCAGGAGGACCTAC
  R  G  I  I  Y  R  D  L  K  L  D  N  V  L  L  D>

1060      1070      1080      1090      1100
CGGACGGGCACATCAAGCTCACAGACTACGGCATGTGCAAGGAAGGCCTG
GCCTGCCCCGTGTAGTTCGAGTGTCTGATGCCGTACACGTTCCCTTCCGGAC
  A  D  G  H  I  K  L  T  D  Y  G  M  C  K  E  G  L>

1110      1120      1130      1140      1150
GGCCCTGGTGACACAACGAGCACTTTCTGCGGAACCCCGAATTACATCGC
CCGGGACCACTGTGTTGCTCGTGAAAGACGCCTTGCGGCTTAATGTAGCG
  G  P  G  D  T  T  S  T  F  C  G  T  P  N  Y  I  A>

1160      1170      1180      1190      1200
CCCCGAAATCCTGCGGGGAGAGGAGTACGGGTTTCAGCGTGGACTGGTGGG
GGGGCTTTAGGACGCCCCCTCTCCTCATGCCCAAGTCGCACCTGACCACCC
  P  E  I  L  R  G  E  E  Y  G  F  S  V  D  W  W>

1210      1220      1230      1240      1250
CGCTGGGAGTCCTCATGTTTGAGATGATGGCCGGGCGCTCCCCGTTTCGAC
GCGACCCTCAGGAGTACAACTCTACTACCGGCCCGCGAGGGGCAAGCTG
  A  L  G  V  L  M  F  E  M  M  A  G  R  S  P  F  D>

1260      1270      1280      1290      1300
ATCATCACCGACAACCCGGACATGAACACAGAGGACTACCTTTTCCAAGT
TAGTAGTGGCTGTTGGGCCTGTACTTGTGTCTCCTGATGGAAAAGGTTCA
  I  I  T  D  N  P  D  M  N  T  E  D  Y  L  F  Q  V>

1310      1320      1330      1340      1350
GATCCTGGAGAAGCCCATCCGGATCCCCCGGTTTCCTGTCCGTCAAAGCCT
CTAGGACCTCTTCGGGTAGGCCTAGGGGGCCAAGGACAGGCAGTTTCGGA
  I  L  E  K  P  I  R  I  P  R  F  L  S  V  K  A>

1360      1370      1380      1390      1400
CCCATGTTTTTAAAAGGATTTTTTAAATAAGGACCCCAAAGAGAGGCTCGGC
GGGTACAAAATTTTCCTAAAAATTTATTCCTGGGGTTTCTCTCCGAGCCG
  S  H  V  L  K  G  F  L  N  K  D  P  K  E  R  L  G>

1410      1420      1430      1440      1450
TGCCGGCCACAGACTGGATTTTCTGACATCAAGTCCCACGCGTTCTTCCG
ACGGCCGGTGTCTGACCTAAAAGACTGTAGTTCAGGGTGCGCAAGAAGGC
  C  R  P  Q  T  G  F  S  D  I  K  S  H  A  F  F  R>

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FIGURE 6 (CONT'D)

1460 1470 1480 1490 1500
 CAGCATAGACTGGGACTTGCTGGAGAAGAAGCAGGCGCTCCCTCCATTCC
 GTCGTATCTGACCCTGAACGACCTCTTCTTCGTCCGCGAGGGAGGTAAGG
 S I D W D L L E K K Q A L P P F>

1510 1520 1530 1540 1550
 AGCCACAGATCACAGACGACTACGGTCTGGACAACTTTGACACACAGTTC
 TCGGTGTCTAGTGTCTGCTGATGCCAGACCTGTTGAAACTGTGTGTCAAG
 Q P Q I T D D Y G L D N F D T Q F>

1560 1570 1580 1590 1600
 ACCAGCGAGCCCGTGCAGCTGACCCAGACGATGAGGATGCCATAAAGAG
 TGGTCGCTCGGGCACGTCGACTGGGGTCTGCTACTCCTACGGTATTTCTC
 T S E P V Q L T P D D E D A I K R>

1610 1620 1630 1640 1650
 GATCGACCAGTCAGAGTTCTGAAGGCTTTGAGTATATCAACCCATTATTGC
 CTAGCTGGTCAGTCTCAAGCTTCCGAACTCATATAGTTGGGTAATAACG
 I D Q S E F E G F E Y I N P L L>

1660 1670 1680 1690 1700
 TGTCCACCGAGGAGTCGGTGTGAGGCCGCGTGCGTCTCTGTCTGGACAC
 ACAGGTGGCTCCTCAGCCACACTCCGGCGCACGCAGAGACAGCACCTGTG
 L S T E E S V>
 ----- C-terminus -->

1710 1720 1730 1740 1750
 GCGTGATTGACCCTTTAACTGTATCCTTAACCACCGCATATGCATGCCAG
 CGCACTAACTGGGAAATTGACATAGGAATTGGTGGCGTATACGTACGGTC

1760 1770 1780 1790 1800
 GCTGGGCACGGCTCCGAGGGCGGCCAGGGACAGACGCTTGCGCCGAGACC
 CGACCCGTGCCGAGGCTCCCGCCGGTCCCTGTCTGCGAACGCGGGCTCTGG

1810 1820 1830 1840 1850
 GCAGAGGGAAGCGTCAGCGGGCGCTGCTGGGAGCAGAACAGTCCCTCACA
 CGTCTCCCTTCGCAGTCGCCCCGCGACGACCCTCGTCTTGTCAGGGAGTGT

1860 1870 1880 1890 1900
 CCTGGCCCCGGCAGGCAGCTTCGTGCTGGAGGAACTTGCTGCTGTGCCTGC
 GGACCGGGCCGTCCGTCTGAAGCACGACCTCCTTGAACGACGACACGGACG

1910 1920 1930 1940 1950
 GTCGCGGCGGATCCGCGGGGACCCTGCCGAGGGGGCTGTCATGCGGTTTC
 CAGCGCCGCCTAGGCGCCCCCTGGGACGGCTCCCCCGACAGTACGCCAAAG

FIGURE 6 (CONT'D)

1960	1970	1980	1990	2000
CAAGGTGCACATTTTCCACGGAAACAGAACTCGATGCACTGACCTGCTCC				
GTTCCACGTGTAAAAGGTGCCTTTGTCTTGAGCTACGTGACTGGACGAGG				

2010	2020	2030	2040	2050
GCCAGGAAAGTGAGCGTGTAGCGTCCTGAGGAATAAAATGTTCCGATGAA				
CGGTCCTTTCACTCGCACATCGCAGGACTCCTTATTTTACAAGGCTACTT				

AAAAAAAAA
TTTTTTTTT

1960 1970 1980 1990 2000

FIGURE 6 (CONT'D)

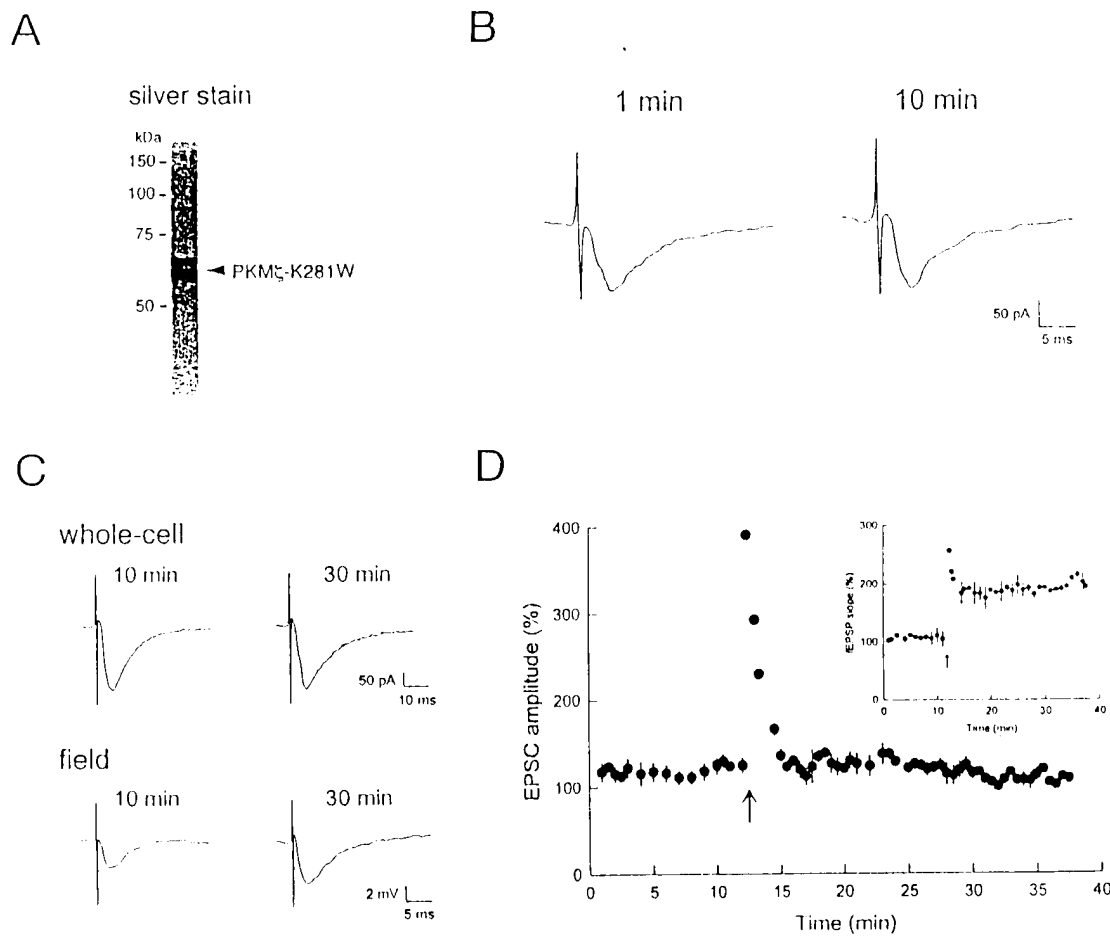


FIGURE 7